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EXAMINER

SETH. MANAV

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/024,495

Applicant(s)

RUBINSTENN ET AL.

Examiner

Manav Seth

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8,10-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8,10-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment received on October 24, 2006 has been entered in full.
2. Applicant's amendment to the specification has been entered and based on the amendment objection on the specification has been withdrawn.
3. Applicant's arguments with respect to rejected claims as presented in the amendment filed have been fully considered but are moot in view of the rejection(s) made below.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-8, 10-23, 26-28 and 31-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Hillebrand et al., U.S. Patent No. 6,571,003.

Regarding claim 1, Hillebrand discloses “receiving at least one image of at least one portion of a subject's facial skin, wherein the at least one image includes facial features enabling substantial identification of the subject's identity” (col. 2, lines 1-14 – the system acquires an image of the face of a person along with all the facial features such as eyes, nose, mouth, and face along with all these features inherently identifies the subject).

Claim 1 further recites **“wherein during identifying, the at least one image is processed to identify substantially all visible occurrences of the at least one skin condition in at least one part of the at least one image; extracting from the at least one image at least one representation of the at least one skin condition, wherein the extracted representation includes a skin condition image devoid of substantially all facial features other than the at least one skin condition”**. Hillebrand discloses “Subsequently, the system electronically determines a sub-image of the first digital image of the face of the person based on the plurality of landmarks. This sub-image is then electronically analyzed to locate a plurality of defect areas. Each defect area is typically much smaller than the first digital image, and each defect area contains at least one visual skin defect” (col. 2, lines 7-14). Hillebrand further discloses “When the process 300 is initiated, the controller 200 acquires an image (step 302), determines **which area(s) of the image to analyze (i.e., a sub-image)** (step 304), analyzes those areas to **locate defects** (steps 306) (figure 3; col. 4, lines 39-53) where identifying or locating the skin defects such as wrinkles, pores, texture, and /or spots (figures 5-8; col. 6, lines 1-8) being identifying the skin conditions where each skin defect representing each skin condition. Hillebrand further discloses “If fully automatic sub-image determination is selected, at step 608 the controller 200 determines **all of the landmarks** 702 for the sub-image automatically by **searching for patterns** in the digital image 518 indicative of predetermined landmarks” (col. 7, lines 17-28). Hillebrand further discloses “The purpose of the index variable is to keep track of which type of skin defect is being analyzed. **If only one defect type is being analyzed, the index variable may be eliminated**. At step 804 **a plurality of areas in the sub-image containing the current defect type are located**. For example, if the sub-image contains six red-spots, **then six locations in the sub-image may be determined.....**” (col. 8, lines 20-45). It is clear from the above disclosure that during identifying, the at least one image is

processed to identify substantially all visible occurrences of the at least one skin condition (defect) in at least one part of the at least one image. Hillebrand further discloses that only wrinkles can be extracted (figure 12), only texture can be extracted (figure 11), only pores can be extracted (figure 13), and only spots can be extracted which conforms to **“extracting from the at least one image at least one representation of the at least one skin condition, wherein the extracted representation includes a skin condition image devoid of substantially all facial features other than the at least one skin condition”**.

Claim 1 further recites **“Storing information reflective of the at least one representation”**. Hillebrand discloses storing information reflective of the at least one representation, and displaying the skin condition image (Figure 2, Data memory 202; col. 4, lines 8-22; col. 10, lines 43-55). Examiner further asserts that it is an inherent fact that “if no memory is present, computer doesn’t exit”. Memory is required in computer system at every step of the processing, for example, extracting the image would require extracting the image from memory, displaying the image would require memory without which the display monitor cannot display the image as refreshing of memory is required to continue to display on the screen.

Claim 1 further recites “displaying the skin condition image such that the subject is substantially unidentifiable”. Hillebrand discloses “Once the sub-images are analyzed, they may be outputted. Outputting an image includes any form of the computer output. For example, the image may be transmitted via the network, displayed by the printer, and/or displayed by one or more displays” (col. 10, lines 43-47). The above disclosure by Hillebrand clearly teaches that a sub-image

after analysis can be displayed and displaying only these sub-images that only recite skin defects would inherently make the subject substantially unidentifiable.

Regarding Claim 2, Hillebrand discloses the method of Claim 1, wherein the stored information includes an image of the at least one skin condition (Col. 7, lines 65-67 through Col. 8, lines 1-17) and further adding more emphasis on figures 11-14 where each skin condition is shown in different image.

Regarding Claim 3, Hillebrand discloses the method of Claim 1, wherein the stored information includes a quantification of the at least one representation (Column 7, Lines 65-67; Column 8, Lines 1-17; figure 8, step 808; col. 8, lines 47-62).

Regarding Claim 4, Hillebrand discloses the method of Claim 3, wherein the quantification indicates at least one of an extent, intensity, frequency, type, and severity of the at least one skin condition (Column 7, Lines 65-67, Column 8, Lines 1-17; figure 8, step 808; col. 8, lines 47-62, Large and small red spots).

Regarding Claim 5, Hillebrand discloses the method of Claim 1, wherein the at least one skin condition includes at least one wrinkle (Figure 5, Wrinkles; Column 6, Lines 1-8).

Claim 6 has been similarly analyzed and rejected as per claim 1-5.

Regarding Claim 7, Hillebrand discloses the method of Claim 6, wherein the visible wrinkles are represented in the extracted representation by marks mirroring contours and locations of the visible wrinkles (Column 8, Lines 33-46).

Regarding Claim 8, Hillebrand discloses the method of Claim 7, wherein wrinkle depth is reflected in the extracted representation by at least one of mark intensity, color, and visual cue (Column 8, Lines 33-46).

Regarding Claim 10, Hillebrand discloses the method of Claim 1, wherein during receiving, the at least one image is obtained in digital form (Figure 1, Digital Image Generator 120).

Regarding Claim 11, Hillebrand discloses the method of Claim 1, wherein during identifying, a computer processor is used to perform an image processing function (Figure 2, Computing Device 106).

Regarding Claim 12, Hillebrand discloses the method of Claim 1, wherein the at least one skin condition includes at least one of skin pore size, texture, elasticity, dryness, cellulitis, sweating, aging, wrinkles, melanoma, exfoliation, desquamation, homogeneity of color, micro-circulation, shininess, softness, smoothness, hydration, sebum production, cleanliness, irritation, redness, vasomotion, vasodilation, vasoconstriction, pigmentation and freckles (col. 6, 1-10; Column 8, Lines 3-18).

Claim 13 recites “the method of claim 1, wherein storing includes saving the at least one representation at a geographical address separate from a geographical address of the at least one image”. It is an inherent well-known fact that without a memory in the computer, computer does not exist and memory is nothing but an array of capacitors or storage cells and each cell hold a limited data and each cell has a different address for identification of data. Examiner further provides an example for better emphasis on the subject matter in the claim 13. Let’s consider two files (or images to be saved as files) A and B to be saved on a floppy disk on a windows system. User saves file A on floppy disk with name (FIRST) and this name is decoded by the system to provide identification to the data of the file in the memory. If the user tries to save the file B with same name (FIRST), the system will show the error message that “Do you want to replace file A with that of B? and if user says yes, the file B will be saved as (FIRST) and file A will be deleted or overwritten and file A does not exist anymore. If file B was saved with a different name other than FIRST, file A would still exist and file B under different name would have different address. When two files have different names when saved, it will fill up the memory space and finally fill up the whole memory when more files are saved on memory and thus additional memory will be required. If files were saved at same location on top of each other, only the last saved file would exit and the memory would never fill. Therefore from the above example it is clear that data are stored at different addresses in the memory. However, the claim recites different geographical locations where images are stored and Hillebrand does teach of acquiring the images and transmitting the images on the network where the network includes LAN and Internet (col. 4, lines 23-30; col. 10, lines 43-46), from which it is clear that these images when acquired from different locations and transmitted to different locations are also stored at those locations.

Regarding Claim 14, Hillebrand discloses the method of Claim 1, further comprising instructing the subject on how to record the at least one image (Figure 4, image Acquisition; Column 4, lines 55-67, Column 5, Lines 1-14).

Regarding Claim 15, Hillebrand discloses the method of Claim 14, wherein instructing includes advising the subject on how to capture the at least one image with an image capture device (Figure 4, image Acquisition; Column 4, lines 55-67, Column 5, Lines 1-14, figures 2-8).

Regarding Claim 16, Hillebrand discloses the method of Claim 15, wherein the image capture device is a digital Camera (Abstract, Lines 4-5).

Regarding Claim 17, Hillebrand discloses the method of Claim 14, wherein instructing includes advising the subject on how to capture the at least one image using a scanner (Abstract, Lines 4-5; Figure 4, image Acquisition; Column 4, lines 55-67, Column 5, Lines 1-14).

Regarding Claim 18, Hillebrand discloses the method of Claim 1, further comprising associating personal information about the subject with the information reflective of the at least one representation (Column 5, Lines 43-59).

Regarding Claim 19, Hillebrand discloses the method of Claim 18, wherein the personal information includes at least one of physical characteristics, lifestyle information, family history information, vocational information, environmental information, genetic information, and information correlated to the at least one skin condition (Column 5, Lines 43-59).

Regarding Claim 20, Hillebrand discloses the method of Claim 19, performed on a plurality of subjects, the method further comprising maintaining a searchable database for correlating personal information of the plurality of subjects with skin conditions of the plurality of subjects (Column 5, Lines 43-59).

Regarding Claim 21, Hillebrand discloses the method of Claim 3, wherein the quantification is tracked over time (Column 13, Lines 5-9).

Claim 22 has been similarly analyzed and rejected as per claims 1-5.

Regarding Claim 23, Hillebrand discloses the method of Claim 1, wherein during extracting at least one portion of the at least one image is magnified to facilitate identifying the at least one skin condition (Column 8, Lines 13-18. U.S. Patent 5,016,173 which is incorporated by reference in Hillebrand's patent discloses the image is magnified to facilitate identifying the at least one skin condition Column 6, Lines 1-6)).

Regarding Claim 26, Hillebrand discloses the method of Claim 1 conducted, at least in part, in a network environment, wherein receiving at least one image occurs via a network and in at least one location remote from a location of the subject (col. 4, lines 23-35; col. 10, Lines 43-57).

With regards to Claims 27 and 32, arguments analogous to those presented for Claim 1 are applicable to Claims 27 and 32.

With regards to Claim 28, arguments analogous to those presented for Claim 23 are applicable to Claim 28.

With regards to Claim 31, arguments analogous to those presented for Claim 26 are applicable to Claim 31.

With regards to Claim 33, arguments analogous to those presented for Claims 1, 22 and 26 are applicable to Claim 33. Hillebrand as discussed before teaches outputting the sub-image and transmitting the sub-image on the network and the extraction of this sub-image is done using computer software.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hillebrand et al., U.S. Patent No. 6,571,003 and further in view of Szwarcbier, U.S. Patent No. 4,253,086.

Claims 24 and 29 recites all the limitations of claim 1 but additionally recites the limitation "wherein skin in the received image is covered with powder to facilitate extracting the at least one

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representation". Hillebrand do not teach applying powder on the skin before image is taken. Applying powder on the skin to emphasize patterns on the skin such as wrinkles, pores, is very well known and has been used widely. Szwarcbier teaches photographic reproduction of the fingerprint, where fingerprint being the pattern present on the finger skin same as wrinkles on the skin and further teaches "In order to obtain a clear picture of the papillary lines, the fingertip will be dusted with powder, preferably white. The powder penetrates into the recesses of the skin, thus giving a clear picture of the papillary lines. The finger is then introduced into fingerprinting device where the finger covered with powder is photographed and the papillary lines are then retraced to form a sharp, clearly visible pattern on the enlarged fingerprint" (col. 3, lines 65-68 through col. 4, lines 1-18). Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention was made to use powder on the skin before taking the image as taught by Szwarcbier in the invention of Hillebrand because it would provide clear and sharp picture of patterns present on the skin. All other limitations recited have been similarly analyzed and rejected as per claims 1-5.

8. Claims 1-8, 10-23, 26-28 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gutkowitz-Krusin et al. ("Krusin"), U.S. Patent No. 6,208,749, and further in view of Hillebrand et al., U.S. Patent No. 6,571,003.

Claim 1 recites **"A method of performing a skin analysis, the method comprising: receiving at least one image of at least one portion of a subject's facial skin"**. Krusin discloses "Systems and methods for the multispectral imaging of skin tissue enables automatic characterization of the condition of a region of interest of the skin, **based on direct digital imaging of the region of interest**" (Abstract, figure 6a, 6d; col. 4, lines 13-16; col. 6, lines 1-55; col. 8, lines 23-30 and 52-55; col. 11, lines 25-30), which conforms to the limitation receiving at least one

image of at least one portion of a subject's skin. Krusin as cited above does teach imaging of subject's skin but does not specifically teach imaging subject's facial skin. However, Hillebrand teaches imaging subject's facial skin (col. 3, lines 38-45). Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention was made to combine the teachings of Krusin and Hillebrand because both references belong to the same field of endeavor and both are directed to solve the same problem such as identifying and extracting the skin defects using image analysis and since the same skin present on face covers or extends to the whole human body, therefore same skin conditions are prone to be present anywhere on the body skin and further adding Hillebrand discloses that the other areas of the body can be imaged as well using the same apparatus (col. 3, lines 40-45) and Hillebrand further disclosing the advantages that "Systems implementing the teachings of the present invention can quickly identify skin defects in a user friendly manner thereby allowing an operator to recommend cosmetic products and/or medical treatments and to simulate an improvement and/ or a worsening of the skin (col. 12, lines 43-48).

Now as per MPEP 2111.04 [R-3], claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure, the term/clause "wherein" in the limitation makes the limitation "wherein the at least one image includes facial features enabling substantial identification of the subject's identity" an optional limitation to be considered. However, since both references have been combined for a reason described above, this limitation has been taught by Hillebrand. Hillebrand discloses "receiving at least one image of at least one portion of a subject's facial skin, wherein the at least one image includes facial features enabling substantial identification of the subject's identity" (col. 2, lines 1-14 – the system acquires an image of the face of a person along

with all the facial features such as eyes, nose, mouth, and face along with all these features inherently identifies the subject).

Claim 1 further recites **“identifying in the at least one image at least one image skin condition, wherein during identifying, the at least one image is processed to identify substantially all visible occurrences of the at least one skin condition in at least one part of the at least one image; extracting from the at least one image at least one representation of the at least one skin condition, wherein the extracted representation includes a skin condition image devoid of substantially all facial features other than the at least one skin condition”**. Krusin discloses the subject matter as disclosed in the claim in (Abstract – characterization of skin condition in a region of interest of the skin; col. 3, lines 36-45; col. 12, lines 58-65 – discrimination and identifying of all occurrences of skin lesion from rest of the skin in the filed-of-view; figures 6a-6f, 7a-7f and 8a-8h – shows extraction of at least one skin condition from at least one image and figures 8(d) and 8(h) shows the extracted represented which includes a skin condition image devoid of substantially all features other than the at least one skin condition (melanoma)).

Further adding, Hillebrand discloses “When the process 300 is initiated, the controller 200 acquires an image (step 302, determines **which area(s) of the image to analyze (i.e., a sub-image)** (step 304), analyzes those areas to **locate defects** (steps 306) (figure 3; col. 4, lines 39-53) where identifying or locating the skin defects such as wrinkles, pores, texture, and /or spots (figures 5-8; col. 6, lines 1-8) being identifying the skin conditions where each skin defect representing each skin condition. Hillebrand further discloses “If fully automatic sub-image determination is selected, at step 608 the controller 200 determines **all of the landmarks** 702 for the sub-image automatically by **searching for patterns** in the digital image 518 indicative of predetermined landmarks” (col. 7,

lines 17-28). Hillebrand further discloses “The purpose of the index variable is to keep track of which type of skin defect is being analyzed. **If only one defect type is being analyzed, the index variable may be eliminated.** At step 804 a **plurality of areas in the sub-image containing the current defect type are located.** For example, if the sub-image contains six red-spots, **then six locations in the sub-image may be determined.....**” (col. 8, lines 20-45). It is clear from the above disclosure that during identifying, the at least one image is processed to identify substantially all visible occurrences of the at least one skin condition (defect) in at least one part of the at least one image. Hillebrand further discloses that only wrinkles can be extracted (figure 12), only texture can be extracted (figure 11), only pores can be extracted (figure 13), and only spots can be extracted which conforms to “**extracting from the at least one image at least one representation of the at least one skin condition, wherein the extracted representation includes a skin condition image devoid of substantially all facial features other than the at least one skin condition**”.

Claim 1 further recites “**Storing information reflective of the at least one representation**”. Krusin teaches memory for image storage (col. 6, lines 10-33). Hillebrand discloses storing information reflective of the at least one representation, and displaying the skin condition image (Figure 2, Data memory 202; col. 4, lines 8-22; col. 10, lines 43-55). Examiner further asserts that it is an inherent fact that “if no memory present, computer doesn’t exit”. Memory is required in computer system at every step of the processing, for example, extracting the image would require extracting the image from memory, displaying the image would require memory without which the display monitor cannot display the image as refreshing of memory is required to continue to display on the screen.

Claim 1 further recites “displaying the skin condition image such that the subject is substantially unidentifiable”. Krusin discloses displaying skin condition images in figures 6(c), 6(f), 7(c), 7(f), 8 (d) and 8(h) (also see col. 6, lines 18-21) and displaying only these skin condition images would inherently make the subject substantially unidentifiable. Further emphasizing on figures 6(a)-(f) and 7(a)-(f) provided by Krusin in which the melanoma is extracted from rest of the skin, the last stage of these figures (6(f) and 7(f)) clearly displays only the melanoma and inherently looking at these images one of ordinary skill in the art cannot even identify that these images are images of a part of skin. Also see Hillebrand that teaches displaying only the sub-images (col. 10, lines 43-44), and displaying only these sub-images that recite only skin defects would inherently make the subject substantially unidentifiable.

Regarding Claim 2, Hillebrand discloses the method of Claim 1, wherein the stored information includes an image of the at least one skin condition (Col. 7, lines 65-67 through Col. 8, lines 1-17) and further adding more emphasis on figures 11-14 where each skin condition is shown in different image.

Regarding Claim 3, Hillebrand discloses the method of Claim 1, wherein the stored information includes a quantification of the at least one representation (Column 7, Lines 65-67, Column 8, Lines 1-17; figure 8, step 808; col. 8, lines 47-62).

Regarding Claim 4, Hillebrand discloses the method of Claim 3, wherein the quantification indicates at least one of an extent, intensity, frequency, type, and severity of the at least one skin

condition (Column 7, Lines 65-67, Column 8, Lines 1-17; figure 8, step 808; col. 8, lines 47-62, Large and small red spots).

Regarding Claim 5, Hillebrand discloses the method of Claim 1, wherein the at least one skin condition includes at least one wrinkle (Figure 5, Wrinkles; Column 6, Lines 1-8).

Claim 6 has been similarly analyzed and rejected as per claim 1-5.

Regarding Claim 7, Hillebrand discloses the method of Claim 6, wherein the visible wrinkles are represented in the extracted representation by marks mirroring contours and locations of the visible wrinkles (Column 8, Lines 33-46). Also, see Krusin (col. 18, lines 30-42).

Regarding Claim 8, Hillebrand discloses the method of Claim 7, wherein wrinkle depth is reflected in the extracted representation by at least one of mark intensity, color, and visual cue (Column 8, Lines 33-46).

Regarding Claim 10, Hillebrand discloses the method of Claim 1, wherein during receiving, the at least one image is obtained in digital form (Figure 1, Digital Image Generator 120). Also, see Krusin (col. 1, lines 20-30; col. 3, lines 35-45).

Regarding Claim 11, Hillebrand discloses the method of Claim 1, wherein during identifying, a computer processor is used to perform an image processing function (Figure 2, Computing Device 106). Also see Krusin (figure 1A).

Regarding Claim 12, Hillebrand discloses the method of Claim 1, wherein the at least one skin condition includes at least one of skin pore size, texture, elasticity, dryness, cellulitis, sweating, aging, wrinkles, melanoma, exfoliation, desquamation, homogeneity of color, micro-circulation, shininess, softness, smoothness, hydration, sebum production, cleanliness, irritation, redness, vasomotion, vasodilation, vasoconstriction, pigmentation and freckles (col. 6, 1-10; Column 8, Lines 3-18).

Claim 13 recites “the method of claim 1, wherein storing includes saving the at least one representation at a geographical address separate from a geographical address of the at least one image”. It is an inherent well-known fact that without a memory in the computer, computer does not exist and memory is nothing but an array of capacitors or storage cells and each cell hold a limited data and each cell has a different address for identification of data. Examiner further provides an example for better emphasis on the subject matter in the claim 13. Let's consider two files (or images to be saved as files) A and B to be saved on a floppy disk on a windows system. User saves file A on floppy disk with name (FIRST) and this name is decoded by the system to provide identification to the data of the file in the memory. If the user tries to save the file B with same name (FIRST), the system will show the error message that “Do you want to replace file A with that of B? and if user says yes, the file B will be saved as (FIRST) and file A will be deleted or overwritten and file A does not exist anymore. If file B was saved with a different name other than FIRST, file A would still exist and file B under different name would have different address. When two files have different names when saved, it will fill up the memory space and finally fill up the whole memory when more files are saved on memory and thus additional memory will be required. If files were

saved at same location on top of each other, only the last saved file would exit and the memory would never fill. Therefore from the above example it is clear that data are stored at different addresses in the memory. However, the claim recites different geographical locations where images are stored and Hillebrand does teach of acquiring the images and transmitting the images on the network where the network includes LAN and Internet (col. 4, lines 23-30; col. 10, lines 43-46), from which it is clear that these images when acquired from different locations and transmitted to different locations are also stored at those locations.

Regarding Claim 14, Hillebrand discloses the method of Claim 1, further comprising instructing the subject on how to record the at least one image (Figure 4, image Acquisition; Column 4, lines 55-67, Column 5, Lines 1-14). Also see Krusin (col. 6, lines 1-35; col. 8, lines 20-68).

Regarding Claim 15, Hillebrand discloses the method of Claim 14, wherein instructing includes advising the subject on how to capture the at least one image with an image capture device (Figure 4, image Acquisition; Column 4, lines 55-67, Column 5, Lines 1-14, figures 2-8).

Regarding Claim 16, Hillebrand discloses the method of Claim 15, wherein the image capture device is a digital camera (Abstract, Lines 4-5). Also see Krusin (col. 4, lines 12-16).

Regarding Claim 17, Hillebrand discloses the method of Claim 14, wherein instructing includes advising the subject on how to capture the at least one image using a scanner (Abstract, Lines 4-5; Figure 4, image Acquisition; Column 4, lines 55-67, Column 5, Lines 1-14).

Regarding Claim 18, Hillebrand discloses the method of Claim 1, further comprising associating personal information about the subject with the information reflective of the at least one representation (Column 5, Lines 43-59).

Regarding Claim 19, Hillebrand discloses the method of Claim 18, wherein the personal information includes at least one of physical characteristics, lifestyle information, family history information, vocational information, environmental information, genetic information, and information correlated to the at least one skin condition (Column 5, Lines 43-59).

Regarding Claim 20, Hillebrand discloses the method of Claim 19, performed on a plurality of subjects, the method further comprising maintaining a searchable database for correlating personal information of the plurality of subjects with skin conditions of the plurality of subjects (Column 5, Lines 43-59).

Regarding Claim 21, Hillebrand discloses the method of Claim 3, wherein the quantification is tracked over time (Column 13, Lines 5-9). Also see Krusin (col. 6, lines 39-42).

Claim 22 has been similarly analyzed and rejected as per claims 1-5.

Regarding Claim 23, Hillebrand discloses the method of Claim 1, wherein during extracting at least one portion of the at least one image is magnified to facilitate identifying the at least one skin condition (Column 8, Lines 13-18. U.S. Patent 5,016,173 which is incorporated by

reference in Hillebrand's patent discloses the image is magnified to facilitate identifying the at least one skin condition Column 6, Lines 1-6)).

Regarding Claim 26, Hillebrand discloses the method of Claim 1 conducted, at least in part, in a network environment, wherein receiving at least one image occurs via a network and in at least one location remote from a location of the subject (col. 4, lines 23-35; col. 10, Lines 43-57).

With regards to Claims 27 and 32, arguments analogous to those presented for Claim 1 are applicable to Claims 27 and 32.

With regards to Claim 28, arguments analogous to those presented for Claim 23 are applicable to Claim 28.

With regards to Claim 31, arguments analogous to those presented for Claim 26 are applicable to Claim 31.

With regards to Claim 33, arguments analogous to those presented for Claims 1, 22 and 26 are applicable to Claim 33.

9. Claims 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gutkowicz-Krusin et al. ("Krusin"), U.S. Patent No. 6,208,749, and further in view of Hillebrand et al., U.S. Patent No. 6,571,003 and further in view of Szwarcbier, U.S. Patent No. 4,253,086.

Claims 24 and 29 recites all the limitations of claim 1 but additionally recites the limitation “wherein skin in the received image is covered with powder to facilitate extracting the at least one representation”. Both Hilebrand and Krusin do not teach applying powder on the skin before image is taken. Applying powder on the skin to emphasize patterns on the skin such as wrinkles, pores, is very well known and has been used widely. Szwarcbier teaches photographic reproduction of the fingerprint, where fingerprint being the pattern present on the finger skin same as wrinkles on the skin and further teaches “In order to obtain a clear picture of the papillary lines, the fingertip will be dusted with powder, preferably white. The powder penetrates into the recesses of the skin, thus giving a clear picture of the papillary lines. The finger is then introduced into fingerprinting device where the finger covered with powder is photographed and the papillary lines are then retraced to form a sharp, clearly visible pattern on the enlarged fingerprint” (col. 3, lines 65-68 through col. 4, lines 1-18). Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention was made to use powder on the skin before taking the image as taught by Szwarcbier in the combined invention of Krusin and Hillerand because it would provide clear and sharp picture of patterns present on the skin. All other limitations recited have been similarly analyzed and rejected as per claims 1-5.

10. **Claims 25 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gutkowicz-Krusin et al. (“Krusin”), U.S. Patent No. 6,208,749, and further in view of Hillebrand et al., U.S. Patent No. 6,571,003 and further in view of EHC Journal, 1994, “Ultraviolet radiation”.

Claims 25 and 30 recites all the limitations of claim 1 but additionally recites the limitation “wherein skin in the received image is illuminated with a Woods lamp to facilitate the at least one representation”. Krusin as disclosed before in the rejection of claim 1 teaches “Systems and

methods for the multispectral imaging of skin tissue enables automatic characterization of the condition of a region of interest of the skin, based on direct digital imaging of the region of interest, **illuminated by appropriately filtered light**" (Abstract) and Krusin further teaches that such a light that could be used is ultraviolet light (col. 13, lines 1-3). The claim recites "wherein skin in the received image is illuminated with a Wood's lamp". Woods lamp as well known is a lamp that radiates ultraviolet light, which is further used in skin analysis to determine skin conditions and was invented by Mr. Robert Wood (1868-1955). Examiner here provides the reference "Ultraviolet Radiation" by EHC, which clearly teaches that Woods Lamp emits ultraviolet light and is further used in skin analysis (page 45 of 256). Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention was made to use Woods lamp as taught by the reference "Ultraviolet Radiation" by EHC in the combined invention of Krusin and Hillebrand because the combined invention of Krusin and Hillebrand teaches illuminating the skin using ultraviolet light and EHC teaches that Woods Lamp is one of the very well known lamps that provides ultraviolet light which further is being used in skin analysis, thus it being a matter of selection of a lamp which emits ultraviolet light, and further being a design choice. All other limitations of claims 25 and 30 have been similarly analyzed and rejected as per claims 1-5.

11. Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Etheredge, III, U. S. Patent No. 5,308,609, further in view of Hillebrand et al., U.S. Patent No. 6,571,003.

Regarding claim 34, Etheredge discloses "The present invention is directed to the treatment of keratinous body materials, e.g. hair, skin, and nails, to prevent damage to these materials or to help restore damaged keratinous body materials to their natural healthy state" (col. 3, lines 23-28) and further discloses "since the invention is particularly directed to hair treatment, it is contemplated

that the inventive concepts described herein may also be employed in the treatment of other human keratinous, namely skin and nails, as well” (col. 12, lines 28-34). Etheredge further teaches polarizing microscopy, which may be employed to analyze these human keratinous for damage (col. 5, lines 44-50; col. 10-16; col. 7, lines 1-40, lines 55-68 through col. 8, lines 1-10). Etheredge further discloses receiving at least one image of at least one portion of a subject’s hair (col. 7, lines 4-12), identifying in the at least one image at least one hair condition (col. 7, lines 60-68 through col. 8, lines 1-20). Etheredge does teach receiving and identifying hair conditions in images by polarizing microscope and further teaches of recording such images in the computer or video recorder (col. 7, lines 1-40, lines 55-68 through col. 8, lines 1-15) but does not explicitly teach of performing image processing function for extracting from the at least one image at least one representation of the at least one hair condition. However, Hillebrand as discussed in the rejection of claim 1 discloses a system which identifies and extracts each skin condition so that each condition is being analyzed by disclosing “When the process 300 is initiated, the controller 200 acquires an image (step 302, determines **which area(s) of the image to analyze (i.e., a sub-image)** (step 304), analyzes those areas to **locate defects** (steps 306) (figure 3; col. 4, lines 39-53) where identifying or locating the skin defects such as wrinkles, pores, texture, and /or spots (figures 5-8; col. 6, lines 1-8) being identifying the skin conditions where each skin defect representing each skin condition. Hillebrand further discloses “At step 804 **a plurality of areas in the sub-image containing the current defect type are located**. For example, if the sub-image contains six red-spots, **then six locations in the sub-image may be determined.....**” (col. 8, lines 20-45). Hillebrand further discloses that only wrinkles can be extracted (figure 12), only texture can be extracted (figure 11), only pores can be extracted (figure 13), and only spots can be extracted. Hillebrand further discloses the visible wrinkles are represented in the extracted representation by marks mirroring contours and locations of the visible wrinkles

(Column 8, Lines 33-46). Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention was made to use Hillebrand's teachings of extracting the representation of the human keratinous conditions in the invention of Etheredge because both references belong to the same field of endeavor and solve the same problem of analyzing the human keratinous conditions using image analysis and both Etheredge and Hillebrand teach saving the received images in the computer memory and Hillebrand further extending the use of computer memory saved images on which image processing functions can be applied to extract each identified keratinous conditions separately so that each condition is analyzed properly for severity calculation (Hillebrand, col. 9, lines 15-25) and proper specific treatment can be advised for each of these conditions identified (Hillebrand, col. 12, lines 44-48) which is also desired by Etheredge (col. 12, lines 28-34; col. 8, lines 1-30).

Claim 34 further recites **"Storing information reflective of the at least one representation"**. Hillebrand discloses storing information reflective of the at least one representation, and displaying the skin condition image (Figure 2, Data memory 202; col. 4, lines 8-22; col. 10, lines 43-55). Examiner further asserts that it is an inherent fact that "if no memory present, computer doesn't exit". Memory is required in computer system at every step of the processing, for example, extracting the image would require extracting the image from memory, displaying the image would require memory without which the display monitor cannot display the image as refreshing of memory is required to continue to display on the screen.

Regarding Claim 35, Hillebrand discloses the method of Claim 34 conducted, at least in part, in a network environment, wherein receiving at least one image occurs via a network and in at least one location remote from a location of the subject (col. 4, lines 23-35; col. 10, Lines 43-57).

Claims 36 and 37 have been analyzed and rejected for the same reasons as applied to claims 34 and 35, since Etheredge teaches that same process can be used for nails, hair and skin.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manav Seth whose telephone number is (571) 272-7456. The examiner can normally be reached on Monday to Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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